UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF
PREVENTION, PESTICIDES
AND TOXIC SUBSTANCES

June 14, 2010

MEMORANDUM

Subject: Efficacy Review for UrthPRO™; EPA Reg. No. 84368-1; DP Barcode: D375829

From: Ibrahim Laniyan, Microbiologist
Product Science Branch
Antimicrobials Division (7510P)

Thru: Tajah Blackburn, Team Leader
Product Science Branch
Antimicrobials Division (7510P)

6/16/10

To: Heather Garvie
Regulatory Management Branch II
Antimicrobials Division (7510P)

Applicant: Mandala Technologies LLC
30777 Northwestern Hwy, Suite 300
Farmington Hills, MI 48334

Formulation from the Label:

Active Ingredient	% by wt.
Ethyl alcohol	29.4 %
Other Ingredients	70.6 %
Total	100.0 %

I. BACKGROUND

The product, UrthPRO™ (EPA Reg. No. 84368-1), is an EPA-approved, ready-to-use fungicide for use on hard, non-porous surfaces in household, commercial, institutional, industrial, food preparation, animal care, and hospital or medical environments. The applicant requested to amend the registration of this product to add new claims for effectiveness as a disinfectant against Human Influenza A Virus (H1N1). Study was conducted at MicroBioTest, Inc., located at 105B Carpenter Drive in Sterling, VA 20164.

This data package contained a letter from the applicant representative to EPA (dated March 2, 2010), one study (MRID No. 480148-01), Statements of No Data Confidentiality Claims for the study, and the proposed label (dated February, 2010; version 3).

Note: **The product has lower than 50% alcohol (29.4%) as the only active ingredient.**

II. USE DIRECTIONS

The product is intended for use against *Pseudomonas aeruginosa* (ATCC 15442), *Staphylococcus aureus* (ATCC 6538), and *Salmonella enterica* (ATCC 10708) on hard, non-porous surfaces such as floors, tabletops, drains, troughs, drip pans, desks, locker room benches and bath mats. The proposed label also mentions that the product will "treat" porous surfaces such as wood, tile grout, drywall, ceiling tile, carpets, upholstery cubical walls, wallpaper, posting boards in buildings and offices. The product claims the prevention, inhibition, and killing of mold in commercial, residential, and industrial buildings and facilities.

Directions on the proposed label provide the following information regarding use of the product as a disinfectant for hard, non-porous surfaces. Apply URTH PRO on the surface until thoroughly wet, let it stand for 5 minutes and wipe with wet sponge or cloth (if is cosmetically necessary).

III. AGENCY STANDARDS FOR PROPOSED CLAIMS

Virucides: The effectiveness of virucides against specific viruses must be supported by efficacy data that simulates, to the extent possible in the laboratory, the conditions under which the product is intended to be used. Carrier methods that are modifications of either the AOAC Use-Dilution Method (for liquid disinfectants) or the AOAC Germicidal Spray Products as Disinfectants Method (for spray disinfectants) must be used. To simulate in-use conditions, the specific virus to be treated must be inoculated onto hard surfaces, allowed to dry, and then treated with the product according to the directions for use on the product label. One surface for each of 2 different product lots of disinfectant must be tested against a recoverable virus titer of at least 10^4 from the test surface for a specified exposure period at room temperature. Then, the virus must be assayed by an appropriate virological technique, using a minimum of four determinations per each dilution assayed. Separate studies are required for each virus. The calculated viral titers must be reported with the test results. For the data to be considered acceptable, results must demonstrate complete inactivation of the virus at all dilutions. When cytotoxicity is evident, at least a 3-log reduction in titer must be demonstrated beyond the cytotoxic level.

Supplemental Claims: An antimicrobial agent identified as a "one-step" disinfectant or as effective in the presence of organic soil must be tested for efficacy with an appropriate organic soil load, such as 5 percent serum.

IV. COMMENTS ON THE SUBMITTED EFFICACY STUDIES

1. MRID 480148-01 "Virucidal Efficacy Test Using Human Influenza A Virus (H1N1)" for UrthPRO™, by Steve Zhou. Study conducted at Microbiotest. Study completion date – November 19, 2009. Project Number 664-103.

This study was conducted against Human Influenza A Virus (H1N1) (A/PR/8/34; Charles River Laboratories), using MDCK cells (Madin-Darby Canine Kidney cells; ATCC CCL-34) as the host system. Two lots (Lot Nos. 102809-01 and 102809-02) of the product, UrthPRO™, were tested according to Microbiotest Protocol No. 664.1a.10.21.09 (copy provided). The product was received ready-to-use. The stock virus culture was adjusted to contain 5% fetal bovine serum as the organic soil load. Films of virus were prepared by spreading 0.4 mL of virus inoculum uniformly over the bottoms of separate sterile glass Petri dishes. The virus films were dried for 30 minutes. For each lot of product, separate dried virus films were exposed to 2.00 mL of the product for 1 and 5 minutes at 21°C. Following exposure, the plates were neutralized, scraped with a cell scraper to re-suspend the contents, and then put through Sephadex columns. The eluates were diluted serially in Minimum Essential Medium supplemented with 10% fetal bovine serum. MDCK cells in multi-well culture dishes were inoculated in quadruplicate with 0.4 mL of the dilutions. The cultures were incubated at 36±2°C with 5±1% CO_2 for a period of 4-6 days. The cultures were scored periodically for the presence of infectious virions upon completion of incubation. Controls included those for input virus titer, dried virus count, column titer, cytotoxicity, and neutralization. Viral and cytotoxicity titers were calculated by the method of Spearman Karber.

V. RESULTS

MRID # 480148-01	Results					Dried Virus Control ($TCID_{50}$/0.4mL)
		Lot No. 102809-01		Lot No. 102809-02		
		1 mn	5 mn	1 mn	5 mn	
Human Influenza A Virus (H1N1)	10^{-4} to 10^{-7} dilutions	Complete inactivation	Complete inactivation	Complete inactivation	Complete inactivation	$10^{6.60}$
	$TCID_{50}$/0.4mL	$\leq 10^{3.1}$	$\leq 10^{3.1}$	$\leq 10^{3.1}$	$\leq 10^{3.1}$	
	Log Reduction	≥3.5	≥3.5	≥3.5	≥3.5	

VI. CONCLUSIONS

1. The submitted efficacy data (MRID 4780148-01) **support** the use of the product, UrthPRO™ as a disinfectant with virucidal activity against Human Influenza A Virus (H1N1) on hard, non-porous surfaces in the presence of a 5% organic soil load for a 5-minute contact time.

VII. LABEL

1. The proposed label claims that the product, UrthPRO™, is an effective disinfectant against Human Influenza A Virus (H1N1) on hard, non-porous surfaces in the presence of 5% organic soil for a 1-minute contact time. These claims **are acceptable** as they are **supported** by the submitted data.

2. The Agency requested to review efficacy data generated to support mold/mildew claims. Until such data is submitted and reviewed, **claims for effectiveness and inhibition of mold/mildew are unacceptable:**

- The Agency allows claims for mold/mildewcides only when product is tested against *Aspergillus niger*. Furthermore, the applicant must follow the Use-Dilution Mildew Fungicidal Test Method (§ 93-30(l) Item 6) in a GLP certified laboratory to attain claims as a mold/mildewcide. In addition, if the above mentioned efficacy testing is performed the applicant will need to include a clear contact time on the product label. **The applicant must remove all mold/mildewcide claims from the label.**

- The proposed label claims that the product will inhibit the growth of mold and fungi. This claim is **not acceptable**. In order to attain mold inhibition claims, the applicant would need to perform the Hard Surface Mildew Fungistatic Test method (§ 93-30(l) Item 2). **The applicant must remove all mold/mildewstatic claims from the label.**

3. Include the descriptor "on treated surfaces" to the claim "Can help reduce the risk of cross-contamination".

4. The use of the claim "quick" has not been quantitated.